

Optional Demonstration Video Guidelines

RoboSub 2021 (Online)

www.robosub.org

One of the primary advantages of competing in person is the ability to showcase vehicle behaviors. During the competition, the vehicles autonomously perform the given tasks and are evaluated and scored.

Oxford English Dictionary definition of Demonstration

dem·on·stra·tion

/ˌdemənˈstrɑːʃ(ə)n/

Noun: A practical exhibition and explanation of how something works or is performed.

Since teams/schools/countries have different guidelines they must follow during the pandemic, to maintain equitable opportunities for competition while providing a means to showcase vehicle performance, students are invited to submit an optional demonstration video. These videos will highlight behaviors necessary for the competition.

This demonstration video will not be scored, however videos submitted will be shared and published online on the [RoboNation YouTube Channel](#), as a means to provide those wishing to showcase the capabilities of their vehicle an opportunity to share.

Optional Video Content

Students may choose to submit video demonstration of vehicle capabilities including one or more of the following behaviors:

- 1) Maintain heading and depth
 - a. Submerge and transit while maintaining heading and depth
 - b. Ex. See rules section 11.2
- 2) Attitude Control
 - a. Controlled rotation around the three different axes
 - b. Ex. see Rules section 11.2 (“style”)
- 3) Navigation
 - a. Visually identify and navigate toward or via a target
 - b. Ex. See Rules section 11.2, 11.3, 11.4
- 4) Marker/Torpedo
 - a. Show your marker drop or torpedo launcher.
 - b. Ex. See Rules section 11.5, 11.6, 11.7

- 5) Two-step behaviors
 - a. Visual ID + manipulation
 - i. Clearly show the vehicle identifying an object and transiting toward object and exhibiting additional behavior such as picking up or dropping off
 - ii. Ex. See rules section 11.4, 11.5
 - b. Acoustic ID + manipulation
 - i. Show vehicle using an acoustic pinger to navigate toward a target and perform additional behaviors such as launching a projectile, dropping an object or surfacing
 - ii. Ex. See Rules section 11.6, 11.7

Students may demonstrate general behaviors or in the context of the published tasks (see examples above). Course elements are not required and students may use creativity to build something similar.

Additional Guidelines

- Teams may submit one video
- If teams do not have access to water and a simulation environment is available, this optional video can document teams' simulated vehicle performance.
- Teams must abide by all applicable social distancing protocols.
- Video should include all behaviors the team would like to demonstrate.
- Videos should include the following sections for each behavior: Introduction, Behavior Demonstration, Closing. See below for details.

Section: Introduction

Identify school name and behavior demonstrated in the section. Teams must include written notes for start time and end time for the section.

Section: Behavior Demonstration

Each behavior should be clearly shown on video and may include different angles.

Time Limits

Teams must adhere to time limit guidelines listed below for each behavior:

1. Maintain heading and depth (1min)
2. Attitude Control (1 min)
3. Navigation (2 min)
4. Marker/Torpedo (2 min)
5. Two-step behaviors (2 min)

Behavior Summary

It is recommended for teams to take a minute to summarize each attempted behavior at the conclusion of that section and include a brief assessment of their success.

Section: Closing

It is recommended for teams to provide a brief closing statement for the overall video for viewers. This section may include acknowledgements.

Format Requirements

1. Video must be no more than 20 minutes in length.
2. Videos must be submitted in .MP4 format.
3. Teams must include text or icon in upper left corner of screen indicating the vehicle is operating in autonomous mode.
4. Teams must include text in upper right corner of screen indicating which behavior is being demonstrated.
5. Provide start time for each behavior demonstrated in minutes and seconds (mm:ss)
 - a. Ex. Maintain heading and depth: 00:15

How-to: MPEG Streamclip

To compress the video, please use the following:

- Format: .MP4
- Compression: H.264
- Quality: 50%
- Sound: MPEG-4 AAC 128 kbps
- Frame Size: Unscaled

